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Marine Casualty Investigations

Enquêtes sur les accidents maritimes

Investigation Report to the Minister pursuant to sections 542 or 545 of the Canada Shipping Act

Rapport d'investigation au Ministre conformément aux articles 542 ou 545 de la Loi sur la marine marchande du Canada

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REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES ATTENDING THE GROUNDING AND STRANDING OF THE CHARTERED CANADIAN FISHERIES RESEARCH VESSEL "LADY HAMMOND", IN YARMOUTH HARBOUR, NOVA SCOTIA, ON JULY 11, 1986.

REPORT No. 445

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REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES ATTENDING THE GROUNDING AND STRANDING OF THE CHARTERED CANADIAN FISHERIES RESEARCH VESSEL "LADY HAMMOND", IN YARMOUTH HARBOUR, NOVA SCOTIA, ON JULY 11, 1986

Particulars of Vessel

Name	"LADY HAMMOND"
Official Number	359149
Port of Registry	Halifax
Call Sign	VC9616
Gross Tonnage	897.0
Net Tonnage	306.3
Length	53.514 m
Breadth	11.216 m
Depth	4.053 m
Draught (At time of incident)	3.657 m forward 5.029 m aft
Type	Steel stern trawler modified for fisheries research
Built	1972 Charles D. Holmes & Co. Ltd. Yorkshire, England
Modified	1978, Immingham, England and Halifax, Nova Scotia
Propulsion	One 4SC-SA N.V. Werkspoor GTM-410 main engine driving one controllable pitch propeller. Engine revolutions and propeller pitch controlled from the wheelhouse.
Cargo/catch	Marine biological specimens
Crew	22
Scientists/biologists	7
Classification Society	Lloyds, Register of Shipping

Class	Maltese Cross 100A1
Owners	Northlake Shipping Ltd. Halifax, Nova Scotia
Charterers (Time)	Department of Fisheries and Oceans (Management Services Division) Halifax, Nova Scotia

Navigating Equipment

Radars 1 and 2	Decca RM 1226, ship's head up or gyro stabilized, ranges 0.25 to 48 miles
Depth Sounder 1	Elac, Laz 72 - Recorder
Depth Sounder 2	Elac, Laz 71 - Recorder
Depth Sounder 3	Elac, Digital read-out
Sonar 1	Elac
Sonar 2	Elac
Loran C 1	Racal Decca 1024
Loran C 2	Internav CC2
Speed Log 1	Doppler DSL200 Raytheon
Speed Log 2	Jungmar Sal Log
Gyro Compass	Sperry
Magnetic Compass	Fitted
VHF Radio 1	Redifon 62670
VHF Radio 2	Sailor 144B
SSB Radio	Daniels 1400
MF/HF Radio	Sailor T122

Description of Vessel

The "LADY HAMMOND" was built at Beverley, Yorkshire, England, in 1972 and named the "HAMMOND INNES". From 1972 until 1978, she was employed commercially as a stern trawler. She was then purchased by her present owners, modified to suit her present role of fisheries research vessel, registered and operated in Canada and had her name changed to "LADY HAMMOND".

Since conversion to a fisheries research vessel, she has been time chartered to the federal Department of Fisheries and Oceans and operated principally out of Dartmouth, Nova Scotia.

In addition to the crew of 22 who are employed by her owners, she carries up to a total of 9 scientists/marine biologists who are employed by the Canadian Department of Fisheries and Oceans.

The "LADY HAMMOND" was in possession of a valid Canadian Steamship Inspection Certificate (SIC 31) with an expiration date of April 4, 1987.

Note: (1) All times in this report are expressed in Atlantic Daylight Saving Time (UTC minus 3 hours).

(2) A glossary of abbreviations and terms, can be found following the Findings in this report.

Background

The Canadian fisheries research vessel "LADY HAMMOND" entered Yarmouth Harbour, Nova Scotia, in the early morning of July 11, 1986.

On approaching a wharf, she grounded on a mud and sand shoal situated outside the channel, in position 43°48'45"N, 66°07'47"W, some 275 m from the wharf.

She refloated on the next rising tide at approximately 1340 the same day, and with the aid of two small inshore fishing vessels re-entered the channel and berthed at Yarmouth under her own power.

There was no damage, pollution or injury as a result of this incident.

Manning and Operation "LADY HAMMOND"

The "LADY HAMMOND" was manned and operated in an unconventional manner; therefore, in order that this report may be more readily understood, the following description is given.

The vessel works for 24 hours of each day when on passage and when trawling; therefore, the 16 members of the deck crew are divided into two 6 hour watches of 8 persons each. Each person works 12 hours per day on either the 12-6 or the 6-12 watch.

Each watch comprises:

1 navigator (captain)	-	navigation, trawling, etc.
1 boatswain	-	assisting the navigator
4 seamen	-	working on deck
2 technicians	-	assisting the scientists

There are no articles of agreement or company directives indicating the rank of each person in the crew; however, one of the navigators was entered on the ship's certificate of registry as the master.

The other navigator was originally the mate but in 1982, at his request and with the verbal agreement of the owners, a position of 2nd captain was created for him and the position of mate eliminated. The master then became known as the 1st captain. The two captains had the appropriate qualifications and received the same salaries. The system of work was the following:

Each captain would take command on alternate voyages, the one in command kept the 6-12 watch and the other the 12-6 watch. The conduct of the ship was left to the captain who happened to be on watch. Each of the boatswains kept a watch on the bridge with the respective captains. The eight seamen were equally divided, four to a watch, and worked on deck.

Narrative

The "LADY HAMMOND" departed Dartmouth, Nova Scotia, on June 30, 1986, bound for the Georges Bank fishing grounds, some 150 miles southwest of Yarmouth, Nova Scotia, where she trawled for marine specimens, principally plankton.

While engaged in trawling, one of the engineering staff suffered an injury to his back and it was decided to interrupt the trawling in order to transport him to Yarmouth for medical treatment.

The "LADY HAMMOND" arrived off Yarmouth Harbour entrance at approximately 0340, on July 11, and proceeded through the channel towards the harbour.

The weather was fine and clear with visibility of 6 to 7 miles in darkness. There was a very light wind from the northwest and the harbour waters were calm. The tide was ebbing, producing an outward current of 2 to 2.5 knots.

The ship's bridge was manned by the 2nd captain and a boatswain. The 4 seamen on watch were stationed at their docking positions, 2 forward and 2 aft, preparing the mooring lines for tying up.

The 1st captain was off watch and was in his cabin, asleep.

Yarmouth Harbour is not a compulsory pilotage area, although pilots are available on demand. In addition, Canadian registered ships of 1,500 tons gross or less and fishing vessels are not compelled to hire pilots in ports on the east coast of Canada.

As was usual, when entering or leaving port during his watch, the 2nd captain undertook his own pilotage. He piloted the 3 mile length of the channel, steered the vessel by using the automatic pilot, and adjusted and maintained a speed through the water of approximately 4 knots by using the propeller pitch and engine control. The speed over the ground, making allowance for the ebb tide, would have been 1.5 to 2 knots.

While approaching the harbour, the 2nd captain and the boatswain were using binoculars to find a clear berth, and when they were approximately midway between the last two starboard hand channel buoys, Y32 and Y34, and about 350 m from the Lobster Rock public wharf the 2nd captain noticed that the ship had started to sheer to starboard. He changed the steering mode from automatic to electric hand steering (jog stick) and applied 10° port rudder in order to counteract the sheer. When the 10° port rudder had been attained (as indicated by the rudder angle indicator), he returned the jog stick to the amidships position. The rudder should have remained at 10° to port but it reportedly continued turning further to port until hard-a-port was reached, where it remained. The jog stick was then placed to starboard and the

rudder responded by moving all the way to starboard, this stopped the vessel's turn to port and commenced her return to starboard.

The turn to port had taken the vessel outside of the channel and she grounded approximately 12 m to the west of port hand buoy Y35 on a heading of 032° true, parallel to the channel and on her original course.

At the time of changing from automatic to electric hand steering and operating the jog stick, the propeller pitch had also been placed to neutral. No astern pitch was applied and the vessel went aground while making a speed of approximately 2 knots over the ground.

During the above, the boatswain on watch continued to look for a berth and did not observe any of the events leading to the grounding. Consequently there were no witnesses to the electrical steering failure other than the 2nd captain. Of the 2 seamen working on the afterdeck, one noticed a green unlit port hand buoy pass close to the starboard side of the ship approximately 10 minutes before the grounding. The buoy was close enough to be visible in the light cast by the afterdeck working lights and was possibly buoy Y27. This would indicate the vessel to have been outside and to port of the channel.

The "LADY HAMMOND" grounded and became stranded at 0425 on a falling tide with 3 hours and 45 minutes remaining before low water.

During the navigation into Yarmouth, the speed log had been in use for monitoring the vessel's speed through the water. The number 1 radar was switched on and in use on the 3 mile range for buoy and land mass identification.

The chart in use was Canadian Hydrographic Service chart (CHS) number 4322 corrected to Notices to Mariners weekly edition No. 5, 1978. This chart had been cancelled and withdrawn from service by the CHS in October 1984. Permanent course lines had been inked onto the chart, and showed the inbound course past the position of grounding to be 032° true. It was situated on the chart table and used for reference purposes.

None of the sounding devices were in use. The anchors were not cleared and thus were not ready for letting go.

The other person present in the wheel-house was the boatswain on watch. His duty was to keep a lookout and to be available to steer using the hydraulic system should the 2nd

captain require him to do so. The hydraulic system was not put to use.

The final part of the main channel into Yarmouth Harbour is straight, 1.3 miles long and varies in width between 110 m and 160 m. It is marked by unlit green can buoys to port, and to starboard by red spar buoys and two red conical buoys equipped with red flashing lights.

The 1st captain was called at 0450 (25 minutes after the grounding) and the Canadian Coast Guard was advised at 0520. In the meantime, several astern movements had failed to refloat the vessel and it was decided by the two captains to wait for the next rising tide.

The "LADY HAMMOND" acquired a slight list on grounding, approximately 3°, and remained at that list throughout the stranding even though at low water she was completely high and dry.

By 1340 on the same day, the tide had risen sufficiently to refloat the "LADY HAMMOND" and, with the aid of two small inshore fishing vessels and the use of her own engines, and with the 2nd captain in control she manoeuvred back into the channel and berthed under her own power using the electric hand steering system.

Inspection by a diver, after berthing, determined that no damage had been incurred to the hull, hull fixtures, propeller or rudder.

The "LADY HAMMOND" departed Yarmouth at 1900 the same day, June 11, 1986, to resume trawling on Georges Bank which she completed on July 16 and then returned to Dartmouth, Nova Scotia, arriving during the morning of July 17.

It was reported that the automatic steering malfunctioned again on three separate occasions, twice on July 16 and once on July 17. All of these steering problems occurred during the 2nd captain's watch and all were corrected after a short period of hydraulic steering and without repairs having been effected.

Analysis

1. Steering Systems "LADY HAMMOND"

The steering arrangement on board consists of two electric motors situated in the steering flat which are activated by either an electric or an hydraulic system originating in the wheel-house.

The two electric motors can operate either together or independently to turn the rudder stock and rudder. As was usual when entering or leaving port, both motors were switched on and in use to provide faster steering responses and additional safety should one of them malfunction.

The electrical steering system is operated by either the automatic pilot or jog stick. The hydraulic system is operated by a conventional steering wheel.

When in the electrical steering mode, change-over from automatic pilot to jog stick control and vice versa is made by turning a lever situated on a console to the left of the automatic pilot and under the jog stick.

Change-over from electrical to hydraulic steering mode and vice versa is made by closing a micro switch in order to acquire electrical steering, and by opening it to acquire hydraulic steering. When in one of the two steering modes, the other will not function. The micro switch is located on a console adjacent to the hydraulic steering wheel and is opened or closed by the movement of a lever.

An auxiliary steering system is located in the steering flat for use in case both of the above systems should become inoperative.

2. Inspection and Tests of the Steering Systems

During the day on which the grounding occurred and while the "LADY HAMMOND" was berthed at Yarmouth after the grounding, the electrical and hydraulic systems were inspected and tested with the following observations:

The rudder angle indicator showed that in both modes the rudder reached a maximum of 27° to port and starboard of the fore and aft line. These maximum rudder angles of turn were reached in both cases in approximately 7 seconds. The rudder stock angles of turn were compared to the rudder angle indicator which showed the indicator to be functioning correctly. The maximum angle of 27° is considered optimum for this vessel's hull form and rudder type.

Both of the systems were tested 20 times with no malfunction. No maintenance or repairs had been made since the grounding.

3. Electrical Steering Characteristics

The automatic pilot is interfaced with the gyro compass and operates the rudder which in turn aligns the ship's head with a course pre-set on a dial in the centre of a gyro compass repeater. Courses can be altered by turning the dial but this practice is not commonly used by navigators when in confined waters, or when travelling at slow speeds or when there is a necessity for constant alterations or adjustments to courses. Responses of automatic steering systems to course alterations at slow speeds are usually slow and tend to cause over-reactions of the rudder.

The jog stick is provided to give direct control of the electric system for use in pilotage situations or when immediate positive action is required.

The jog stick operates the system when it is moved from the upright to either port or starboard. This activates two relay switches, one to turn the rudder to port and one to turn it to starboard. The rudder does not return to amidships when the jog stick is placed in the upright position but requires the jog stick to be moved in the opposite direction to close the appropriate relay switch. Placing the jog stick in the upright position merely ensures that both relays are open and that the rudder will remain at the angle it has reached. The jog stick automatically returns to the upright when let go.

This system requires constant monitoring of the rudder angle indicator when steering.

4. Steering Failures Prior to the Grounding

The electric steering system had been renewed approximately 4 years earlier. None of the service reports available showed that a similar fault had occurred previously. Neither of the captains had experienced this type of malfunction before.

5. Condition of Electrical Contacts

The relay switch contacts appeared to be clean with no pitting. There was no sparking as they opened and closed. They gave no indication of having been stuck in a closed position.

The micro switch in the electric/hydraulic change-over system was clean and in good condition; however, it was found that this switch could be opened by a slight

pressure on the lever. This would cause it to remain open and it would not be obvious during a casual inspection. The electric steering system would then cease to function and the rudder would remain at the angle it had attained.

6. Steering Failure Causing Grounding

The reported malfunctions of the rudder turning to hard-a-port when the jog stick was placed amidships could not be attributed to the change-over micro switch being opened.

An exhaustive check on the mechanical aspects of the system determined it to be in good condition.

An inspection of the electrical system by an independent electronics technician failed to find any faults.

Extensive testing of the system when alongside the berth at Yarmouth and again at Dartmouth did not produce malfunctions.

At the time of writing this report, the cause of the steering failure prior to grounding cannot be determined, nor can the failure itself be proven.

7. Subsequent Steering Failures

During July 16, while engaged in trawling (after the grounding) and while the vessel was steering a constant course on automatic pilot at a speed of 2.5 knots, the steering reportedly malfunctioned twice with the rudder remaining at the midship or near midship position. In both cases, the change-over micro switch was opened and the hydraulic system was put into use for approximately 10 minutes. The micro switch was then closed and the electrical system was found to work normally. Of the above two malfunctions, one occurred at a time either shortly before or shortly after the 2nd captain had left the bridge, leaving the boatswain on watch in sole charge.

On that occasion, the boatswain, on observing that the vessel was slowly altering her course under the influence of wind and sea realized that the steering was not operating properly. He switched to hydraulic steering and returned the ship to her course and awaited the return of the 2nd captain who arrived some 10 minutes later.

During July 17, when en route to Dartmouth on automatic pilot and travelling at 10 knots, it is reported that another malfunction occurred but this time with the rudder stuck at 15° to port. Again, after approximately 10 minutes of hydraulic steering, the electric steering returned to normal. All of the above three malfunctions occurred during the 2nd captain's watch.

8. Possible Cause of Subsequent Steering Failures

The change-over micro switch may have been partially opened due to the ship's movement, vibration or accident, causing the rudder to stop at the angle it had attained. The electrical steering system returned to normal after the micro switch had been fully opened to acquire hydraulic steering and then closed in order to return to electrical steering.

9. Tidal Conditions Yarmouth

The "LADY HAMMOND" grounded at 0425 on July 11, on a mud and sand bank which is shown on the chart as drying to a height of approximately 1 m above chart datum at low-water. The next low water at 0810 gave a height of tide above datum of 0.6 m; therefore, the vessel's bottom was resting on a bank that, at low water, was dry to a height of approximately 0.4 m.

10. Tidal Streams (Currents) Yarmouth

The grounding occurred at 0425 which was 3 hours and 45 minutes before the next low water at 0810. The tide was ebbing in a direction opposite to the vessel's course. It was calculated to have produced a tidal stream of approximately 2 to 2.5 knots at the time and in the vicinity of the grounding.

11. Method of Pilotage

The method of pilotage into Yarmouth was one where all the navigation was carried out by one person. The steering was left on automatic pilot and the speed maintained at 4 knots through the water, producing a speed over the ground of approximately 1.5 to 2.0 knots, while stemming a current of 2.0 to 2.5 knots.

Under such conditions steering and speed must be carefully controlled. If the tidal stream is allowed to fall against the bow, it can cause a vessel to sheer and the application of too much helm to correct the sheer can cause a greater sheer in the opposite direction.

12. **Sighting of Port Hand Buoy**

The seaman who sighted the port hand buoy on the starboard side was engaged in preparing the mooring ropes and paid little heed to the buoy apart from noticing its proximity. He did not report it to the bridge, neither would he be required to unless specifically directed to do so.

13. **Anchors "LADY HAMMOND"**

The anchors were not cleared and consequently were not ready for letting go. The only means of stopping the vessel in an emergency was to adjust the main engine revolutions and the propeller pitch.

14. **Depth Sounder**

None of the depth sounders were in use; therefore, there is no record of depth of water under the keel prior to grounding. Such a record would have assisted in verifying the course made good prior to grounding.

15. **Chart in Use**

The chart in use was Canadian Hydrographic Service (CHS) chart No. 4322. This chart had been cancelled and withdrawn from service by the CHS in October 1984 and a Notice to Mariners to that effect (number 118-84) was issued by the Canadian Coast Guard. It was replaced by CHS chart No. 4245.

The chart in use had been corrected to Notices to Mariners, weekly edition No. 5, of 1978. A further 6 notices had been issued up to the time of withdrawal and a further 11 issued for CHS chart No. 4245 up to the date of grounding.

Part II, section 20 of the Canadian Coast Guard publication entitled Recommended Code of Nautical Procedures and Practices, 1985, based on the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, states in part:

> The largest scale chart on board suitable for the area and corrected with the latest information should be used.

The chart in use, CHS No. 4322, clearly indicated the last correction to have been made in 1978, the year the vessel came to Canada. Even though the chart had not

been corrected over a period of 8 years, it was nevertheless used for reference purposes.

Of the 17 Notices to Mariners issued since the last chart correction in 1978, none applied to buoys or navigational hazards in the vicinity of the grounding. The channel buoys in the area were inspected by the Canadian Coast Guard subsequent to the grounding and found to be in the positions depicted on the chart in use and the new chart, CHS 4245. However, good seamanship and the ordinary practice of seamen dictate that a vessel be equipped with the latest charts available and that the charts used during a voyage be corrected to the latest edition of Notices to Mariners.

16. Local Experience

The 2nd captain had arrived at and departed from Yarmouth on the "LADY HAMMOND" approximately 4 times. On those occasions, he had the conduct of the ship 3 times, one of which was during the hours of darkness some 2 years previously.

17. Pilotage Yarmouth

The Canadian Hydrographic Service's Sailing Directions, 'Nova Scotia (SE Coast) and Bay of Fundy' states:

> Pilotage Pilotage is not compulsory, but a pilot is available and advisable for mariners not having local knowledge.

18. Berthing Arrangements Yarmouth

There are two public wharves in Yarmouth, one is known as the Lobster Rock Wharf and the other as the Old Public Wharf.

Except for passenger car-ferries, which ply between Yarmouth and Maine, U.S.A. and have their own terminal, the port is used on a regular basis primarily by small fishing vessels which generally favour Lobster Rock Wharf.

Vessels which do not use the port on a regular basis and are not familiar with the berthing facilities and do not engage the services of a pilot, can determine the availability of a berth by contacting the harbour master via Yarmouth Coast Guard Radio during regular working hours, or, if necessary, outside of those hours.

During the morning of the grounding, a clear berth suitable for the "LADY HAMMOND" was available at the Old Public Wharf. The "LADY HAMMOND" had not requested information from the harbour master regarding the availability of a berth.

19. **Bridge Management "LADY HAMMOND"**

The usual system on vessels of this size and type, operating on the east coast of Canada, is for the master to undertake his own pilotage and to steer by use of the electric hand system (jog stick) or to direct a helmsman to steer by use of the hydraulic system.

The mate assists the master by monitoring the actions of the helmsman and by advising the master of navigational aids and dangers, etc. The master, on occasion, designates pilotage of the vessel to the mate in situations where he feels that the mate is capable and has a knowledge of the local area.

The appointment of two captains and the elimination of the mate's position left both captains without the assistance of a mate and the usual command structure of master/mate/boatswain was broken. Each captain conducted his own watch in the manner that he felt he should. Responsibility for the vessel was left with the captain on watch.

20. **Owners' Directives or Company Standing Orders**

There were no written directives from the owners regarding the management of the vessel.

21. **Master's Standing Orders**

There were no written master's orders regarding the proper conduct of a watch or pilotage.

22. **Crew Qualifications "LADY HAMMOND"**

The 1st captain (master) holds a Canadian Fishing Master certificate of service, and has 37 years seafaring experience, 24 years as a fishing skipper, the last 4 as master of the "LADY HAMMOND".

The 2nd captain holds a Canadian, Fishing Master Class II certificate of competency and a British, Fishing Vessel Skipper certificate. He has 25 years seafaring experience, 14 years as a fishing skipper, 6 years on the "LADY HAMMOND", the last 4 as 2nd captain.

The boatswain on watch has no marine qualifications nor is he required to by the regulations. He has 31 years seafaring experience, the last 7 on the "LADY HAMMOND".

Findings

The "LADY HAMMOND" grounded and became stranded on a mud and sand bank in Yarmouth Harbour, Nova Scotia, on July 11, 1986, whilst approaching a wharf in darkness but in otherwise good weather conditions.

It would appear that the following factors contributed to the grounding:

- a failure in the electrical steering system, but this has not been proven;
- failure to pre-plan harbour manoeuvres in not requesting information on berth availability and necessitating the search for a berth instead of paying attention to the navigation of the vessel;
- the presence of a strong ebb tide at the time of the casualty;
- failure to use radar to identify unlit port hand buoys; and
- not having the vessel in hydraulic steering and not having a man at the helm.

Other Findings

The automatic pilot should not have been used in harbour waters, where quick positive alterations of courses could have been required both for navigation and possible collision avoidance.

The anchors should have been cleared for letting go and an echo sounder should have been in operation.

The vessel should have carried up to date charts, corrected to the latest weekly edition of Notices to Mariners.

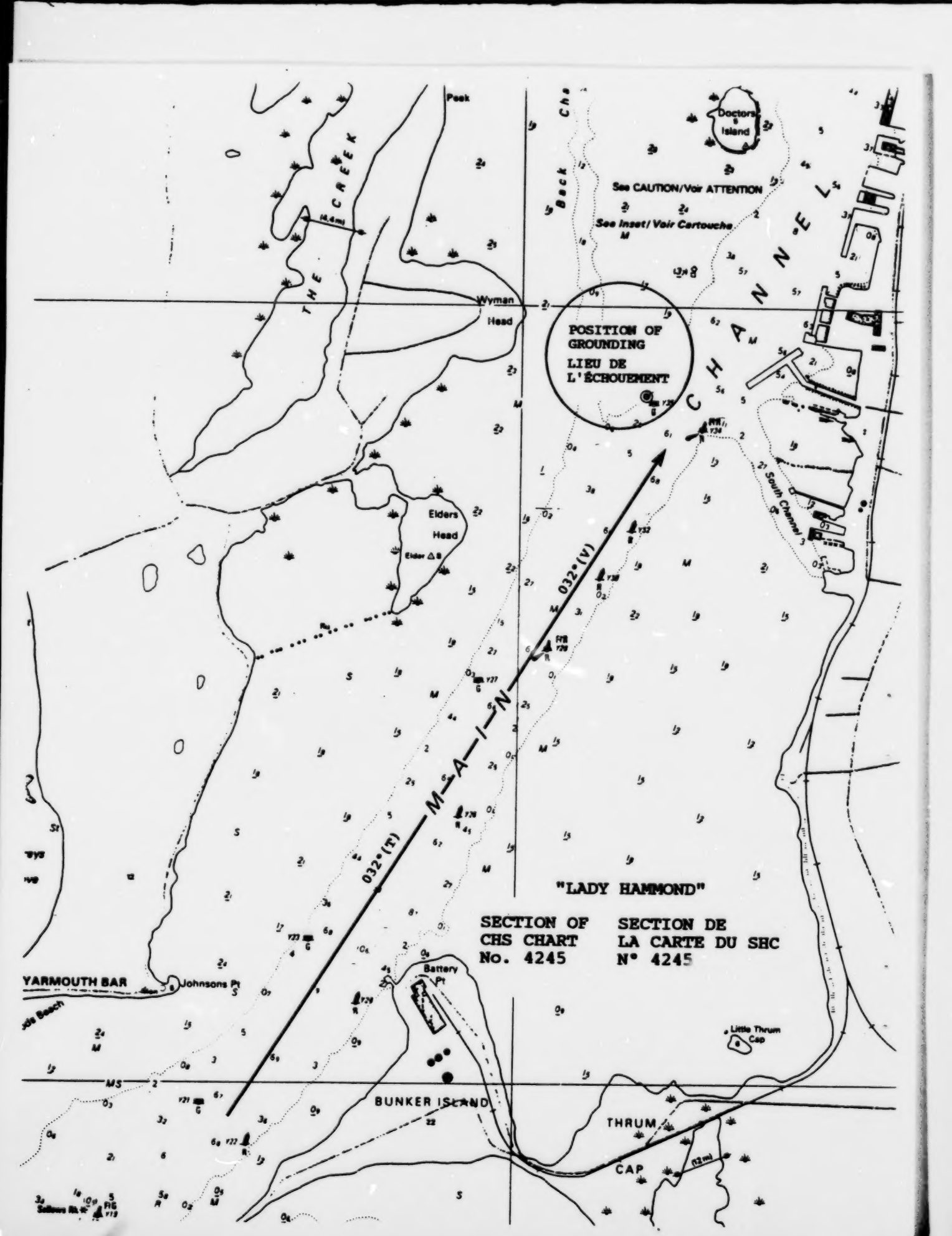
The system of two captains departs from the standard practice of master and mate, where the master is in command at all times and can call upon the mate for assistance or delegate authority to him.

The owners agreed verbally to the above system without ensuring that the person appointed 'captain' for the voyage was entered as master in the ship's certificate of registry, nor did they ensure that he was fully aware of his authority and responsibilities.

OTTAWA, ONTARIO
NOVEMBER, 1986.

Glossary

Datum	Base line from which heights of tide are measured, usually the lowest normal tide
Jog stick	Vertical steering lever used with electrical hand-steering system
Knot	Unit of speed; i.e., 2 knots = 2 nautical miles per hour
List	An angle of heel from the upright
Notice to Mariners	Printed notices regarding dangers to navigation, changes to navigational aids, etc., issued weekly
Pilotage	The art of navigating a vessel in confined waters or past dangers
Sheer	To deviate from the line of course to a large extent due to the ship being difficult to steer or careless handling of the helm
UTC	Coordinated Universal Time


THE CREEK
Peak
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CHANNEL
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South Channel
032°(V)
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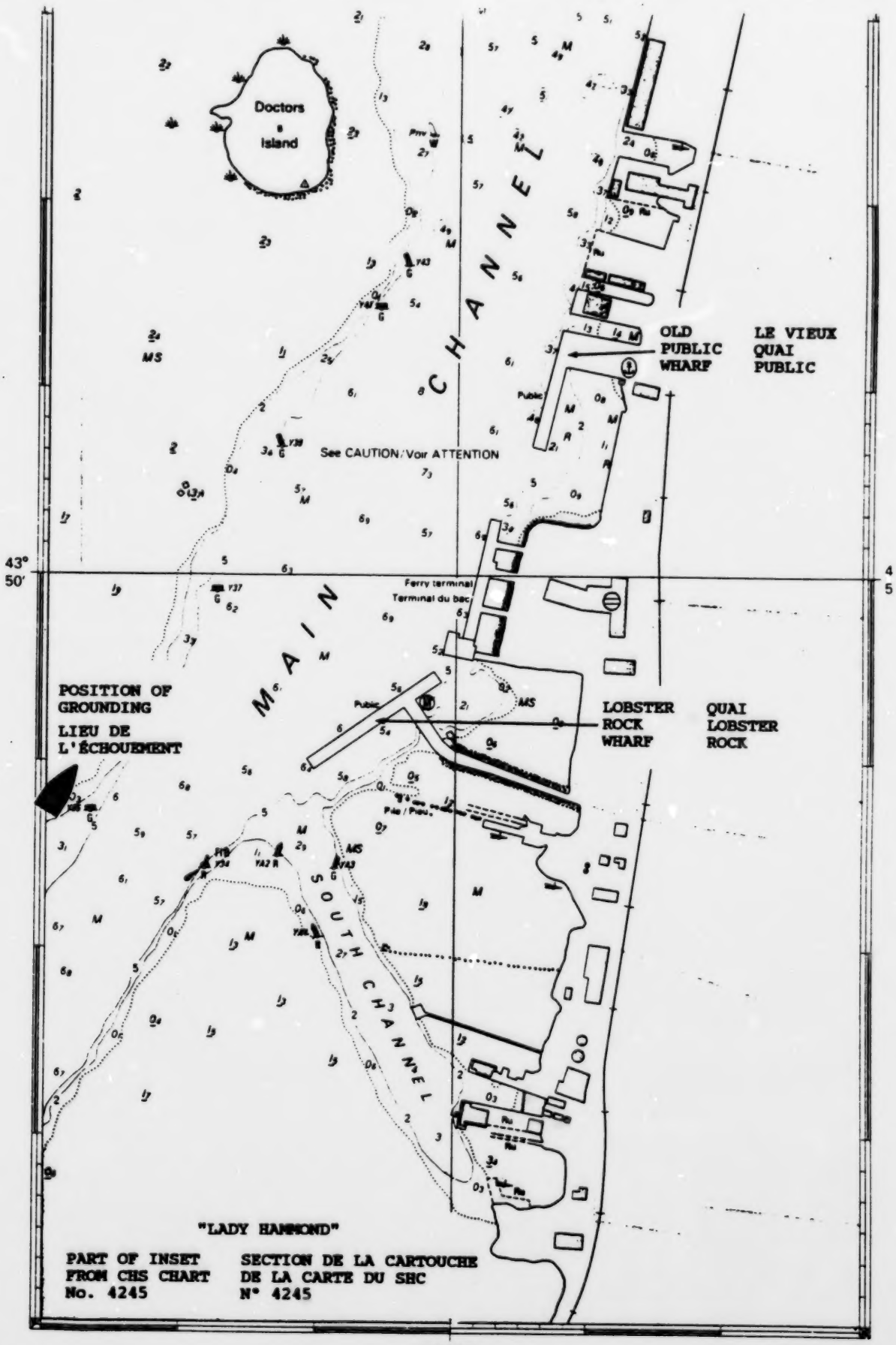
MAIN
"LADY HAMMOND"
SECTION OF CHS CHART No. 4245
SECTION DE LA CARTE DU SHC N° 4245
YARMOUTH BAR
Johnsons Pt
Battery Pt
Little Thrum Cap
BUNKER ISLAND
THRUM CAP

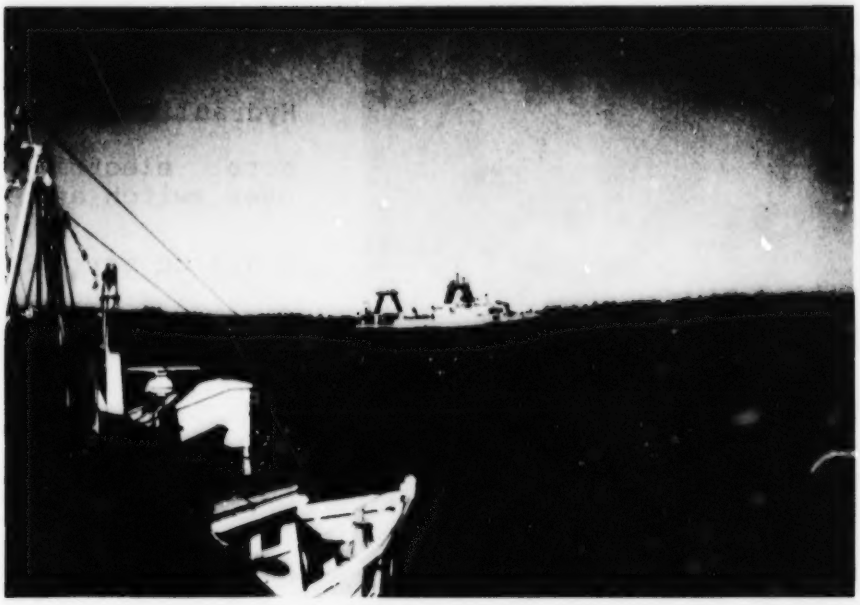


"LADY HAMMOND"

PART OF INSET FROM CHS CHART No. 4245

SECTION DE LA CARTOUCHE DE LA CARTE DU SHC N° 4245

"LADY HAMMOND"



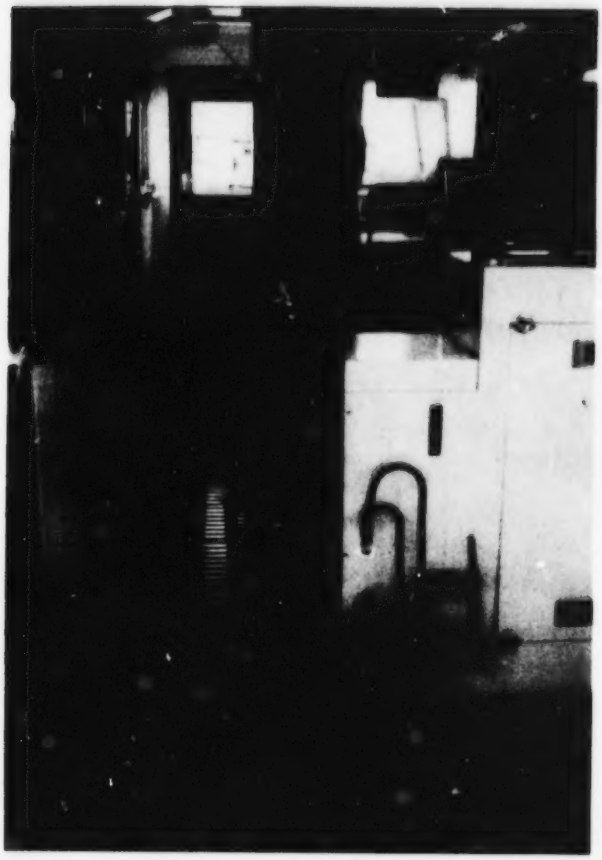
"LADY HAMMOND" stranded at Yarmouth, approximately 1 hour after low water

Le "LADY HAMMOND" échoué à Yarmouth, approximativement 1 heure après la marée basse

"LADY HAMMOND" alongside Old Public Wharf, Yarmouth

Le "LADY HAMMOND" le long du Old Public Wharf à Yarmouth

"LADY HAMMOND"



Hydraulic steering position

Note: electric/hydraulic change-over switch and lever

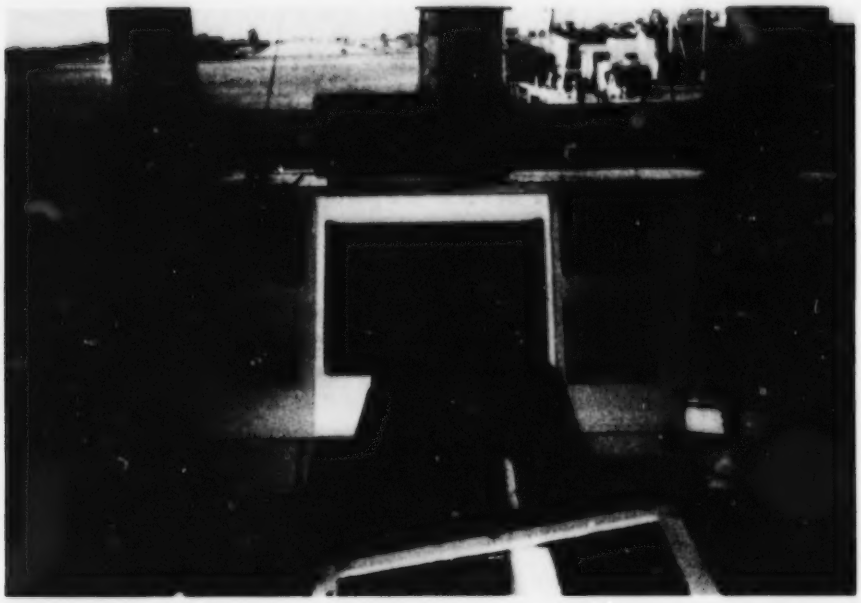
Poste de barre hydraulique

À remarquer : levier et commutateur électro-hydraulique

Electric/hydraulic change-over micro switch

Micro-contact électro-hydraulique

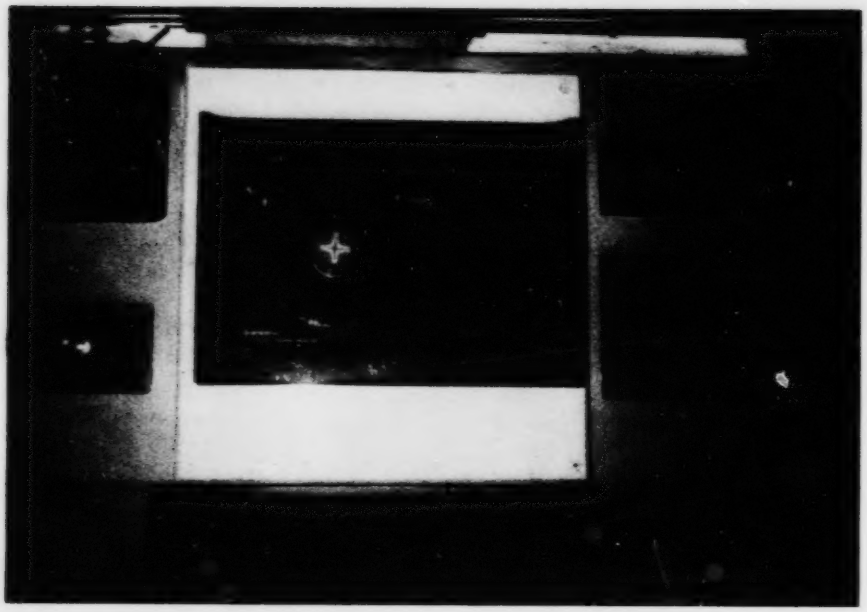
"LADY HAMMOND"



Forward view from wheel-house

Vue vers l'avant de la timonerie

"LADY HAMMOND"



Autopilot

Note :	Top left	joσ stick
	Left centre	auto/hand-steering change-over lever
	Centre	autopilot course set and alteration control
	Right	Sal speed log

Autopilote

Nota :	En haut à gauche	manche à balais
	Au centre à gauche	levier du commutateur de pilotage automatique/à main
	Au centre	bloc-commande de l'ajustement et du changement de route de l'autopilote
	À droite	loch Sal